EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Tianxin Wang on 01/29/09.

The application has been amended as follows:

Title (New): "MALDI analysis based on derivatized matrices forming covalent bonds with analyte molecules".

In the specification: on page 6 lines 12-14 should be rewritten as the following: the space in the brackets (such as ...) should be removed; and the chemical names "poly lysine" and "poly acrylic acid" should be rewritten as "polylysine" and "polyacrylic acid".

In the claims:

Cancel claims 4, 8-17 and 32.

Claim 25. (Amended) A method for MALDI mass spectrometric analysis of ~~desorbing~~ analyte molecules comprising an amino group ~~from a sample presenting surface~~, comprising:

providing a photon energy absorbing molecule selected from the group consisting of N-hydroxy succinimide (NHS) ester of 2,5-~~D~~dihydroxybenzoic acid-~~NHS ester~~, alpha-~~C~~cyano-4-hydroxycinnamic acid -~~NHS ester~~ and 3-~~P~~picolinic acid-~~NHS ester~~;

mixing and incubating said photon energy absorbing molecule with a sample solution containing said analyte molecule, thereby forming a covalent ~~complex~~ bond between said analyte molecule and said photon energy absorbing molecule and thus forming a new molecule; ~~and~~

exposing said ~~complex~~ newly formed molecule deposited on ~~the sample presenting surface~~ a substrate, to a laser source to desorb the analyte molecule that has not reacted with the photon energy absorbing molecule or the ~~complex~~ newly formed molecule from said ~~surface~~ substrate; and,

performing MALDI analysis of the analyte molecule.

Claim 29. (Amended) A method for MALDI mass spectrometric analysis of ~~desorbing~~ analyte molecules comprising an amino group ~~from a sample presenting surface~~, comprising:
providing a photon energy absorbing molecule, wherein the photon energy absorbing molecule comprises a photon energy absorbing moiety, which is a residue of an acid selected from the group consisting of 2,5-~~D~~dihydroxybenzoic acid, alpha-~~C~~cyano-4-hydroxycinnamic acid, and 3-~~P~~picolinic acid and a reactive group selected from the group consisting of anhydride, active ester, aldehyde, alkyl halide, and acid chloride;
mixing and incubating said photon energy absorbing molecule with a sample solution containing said analyte molecule, thereby forming a covalent ~~complex~~ bond between said analyte molecule and said photon energy absorbing molecule and thus forming a new molecule; ~~and~~
exposing said ~~complex~~ newly formed molecule deposited on ~~the sample presenting surface~~ a substrate, to a laser source to desorb the analyte molecule that has not reacted with the photon energy absorbing molecule or the ~~complex~~ newly formed molecule from said ~~surface~~ substrate; and,
performing MALDI analysis of the analyte molecules.

Claim 30. (Amended) The method of claim 29, wherein the analyte molecules ~~has a functional group selected from the group consisting of amino, hydroxyl, and SH~~ are selected from the group consisting of peptides, polypeptides and proteins.

Claim 33. (New) The method of claim 25, wherein the analyte molecules are selected from the group consisting of peptides, polypeptides and proteins.

Claim 34. (New) The method of claim 29, wherein the analyte molecules are selected from the group consisting of peptides, polypeptides and proteins.

Claims 25-31 and 33-34 are allowed. The new numbering of claims is 1 through 9.

The following is an examiner's statement of reasons for allowance: the prior art does not teach or fairly suggest performing MALDI analysis using matrices, which form covalent bonds with analyte molecules.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yelena G. Gakh, Ph.D. whose telephone number is (571) 272-1257. The examiner can normally be reached on 9:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yelena G. Gakh/
Primary Examiner, Art Unit 1797

1/29/2009